

100

VLAN 102

SERVER 104

CLIENT 106

CLIENT 108

SWITCH 134

VLAN 110

SERVER 112

CLIENT 114

CLIENT 116

SWITCH 136

VLAN 118

SERVER 120

CLIENT 122

CLIENT 124

SWITCH 138

128

130

132

ROUTER 126

FIGURE 1
(PRIOR ART)

100

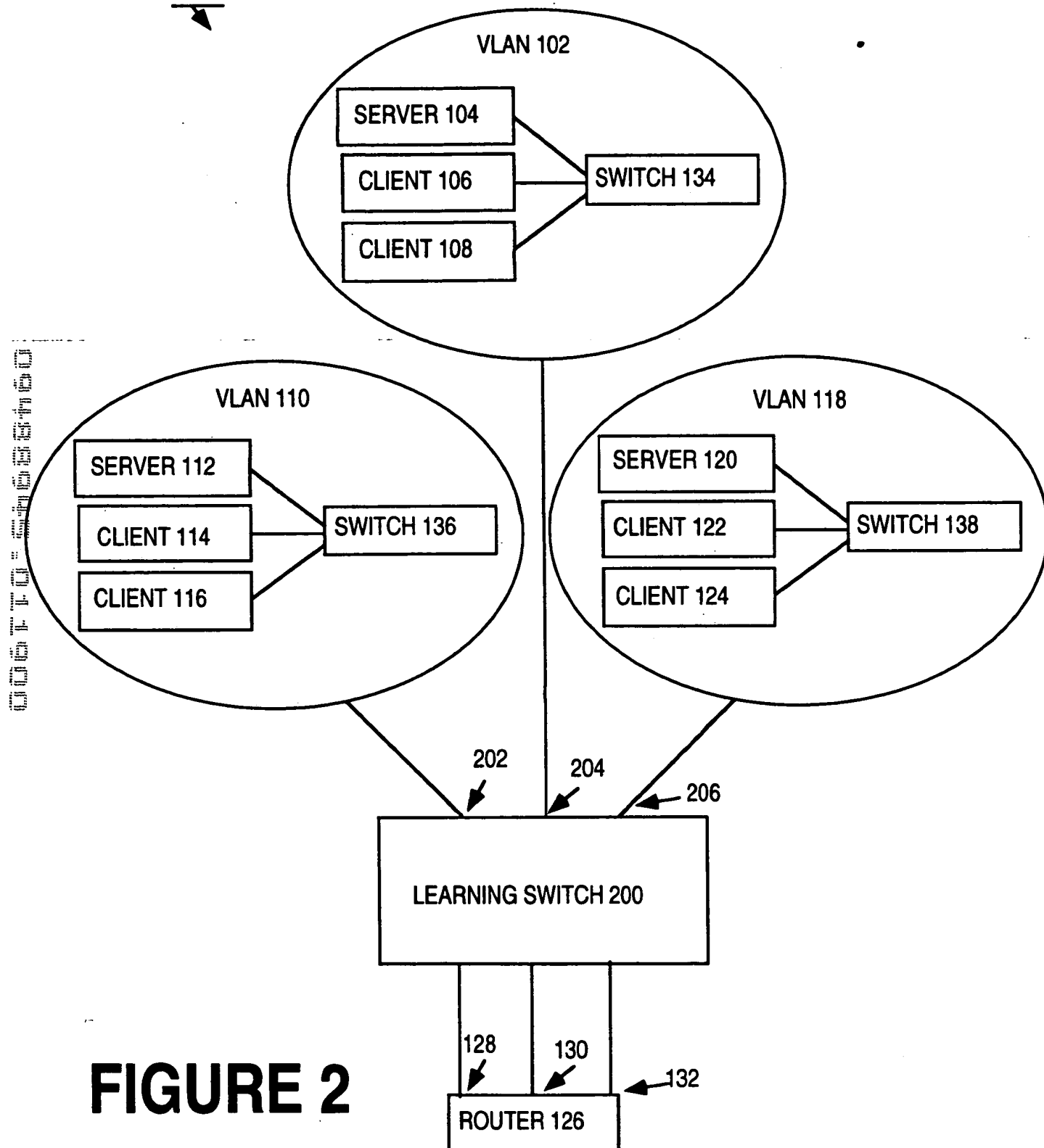


FIGURE 2

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graph TD
    300[SOURCE-DEV DETERMINES THAT DEST-DEV IS NOT A MEMBER OF  
SOURCE-VLAN BASED ON DDL3] --> 302[SOURCE-DEV TRANSMITS AN ARP QUERY THAT REQUESTS THE L2  
ADDRESS ASSOCIATED WITH DGL3]
    302 --> 304[SWITCH 200 RECEIVES THE ARP QUERY THROUGH THE PORT OF  
SWITCH 200 THAT CORESPONDS TO DG AND INSPECTS THE  
PROTOCOL-TYPE INFORMATION IN THE ARP QUERY TO DETERMINE  
THAT THE PACKET IS AN ARP QUERY]
    304 --> 306[SWITCH 200 READS THE L2 SOURCE ADDRESS (SA) AND THE L3  
SOURCE ADDRESS (SNLA) FROM THE ARP QUERY]
    306 --> 308[THE SWITCH 200 STORES DATA INDICATING THAT (1) SDL2 IS THE L2  
ADDRESS THAT CORRESPONDS TO SDL3 AND (2) THE DEVICE THAT  
HAS THE L2 ADDRESS SDL2 IS CONNECTED TO THE PORT OF SWITCH  
200 ON WHICH THE ARP QUERY ARRIVED]
    308 --> 310[THE SWITCH 200 FORWARDS THE ARP QUERY TO THE PORT OF  
ROUTER 126 THAT CORRESPONDS TO THE PORT ON WHICH SWITCH 200  
RECEIVED THE ARP QUERY]
    310 --> 312[ROUTER 126 TRANSMITS A RESPONSE TO THE ARP QUERY THROUGH  
DG]

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TO STEP 314

Figure 3a

FROM 312

314
SWITCH 200 RECEIVES THE ARP RESPONSE FROM DG

316
SWITCH 200 READS THE SNLA SPECIFIED IN THE ARP RESPONSE TO
DETERMINE IF THE ARP RESPONSE IS FROM DG

318
SWITCH 200 STORES DATA INDICATING THAT DGL2 IS THE L2 ADDRESS
THAT CORRESPONDS TO DGL3

320
SWITCH 200 FORWARDS THE ARP RESPONSE TO SOURCE-DEV

Figure 3b

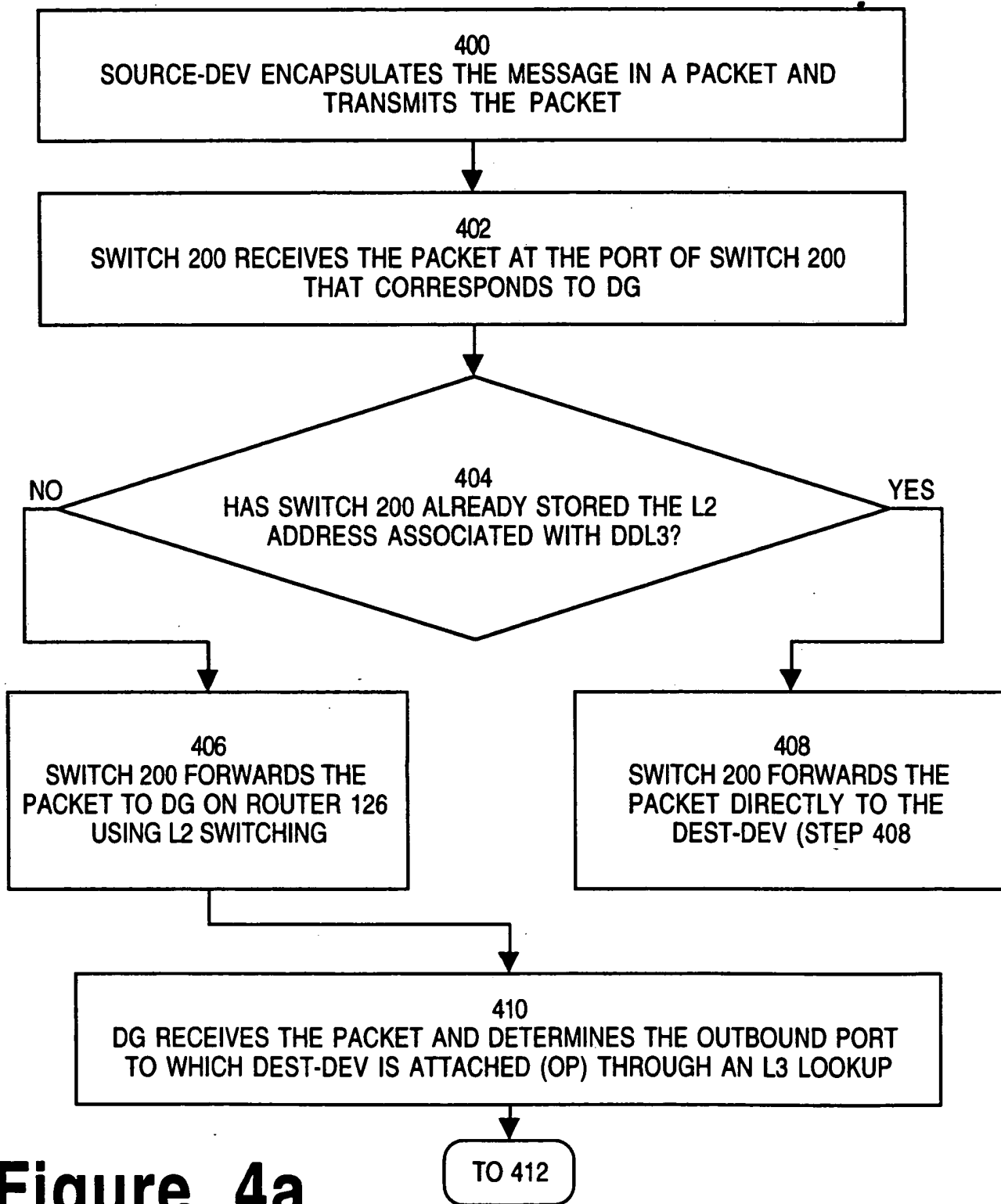


Figure 4a

U.S. PAT. & TM. OFF.

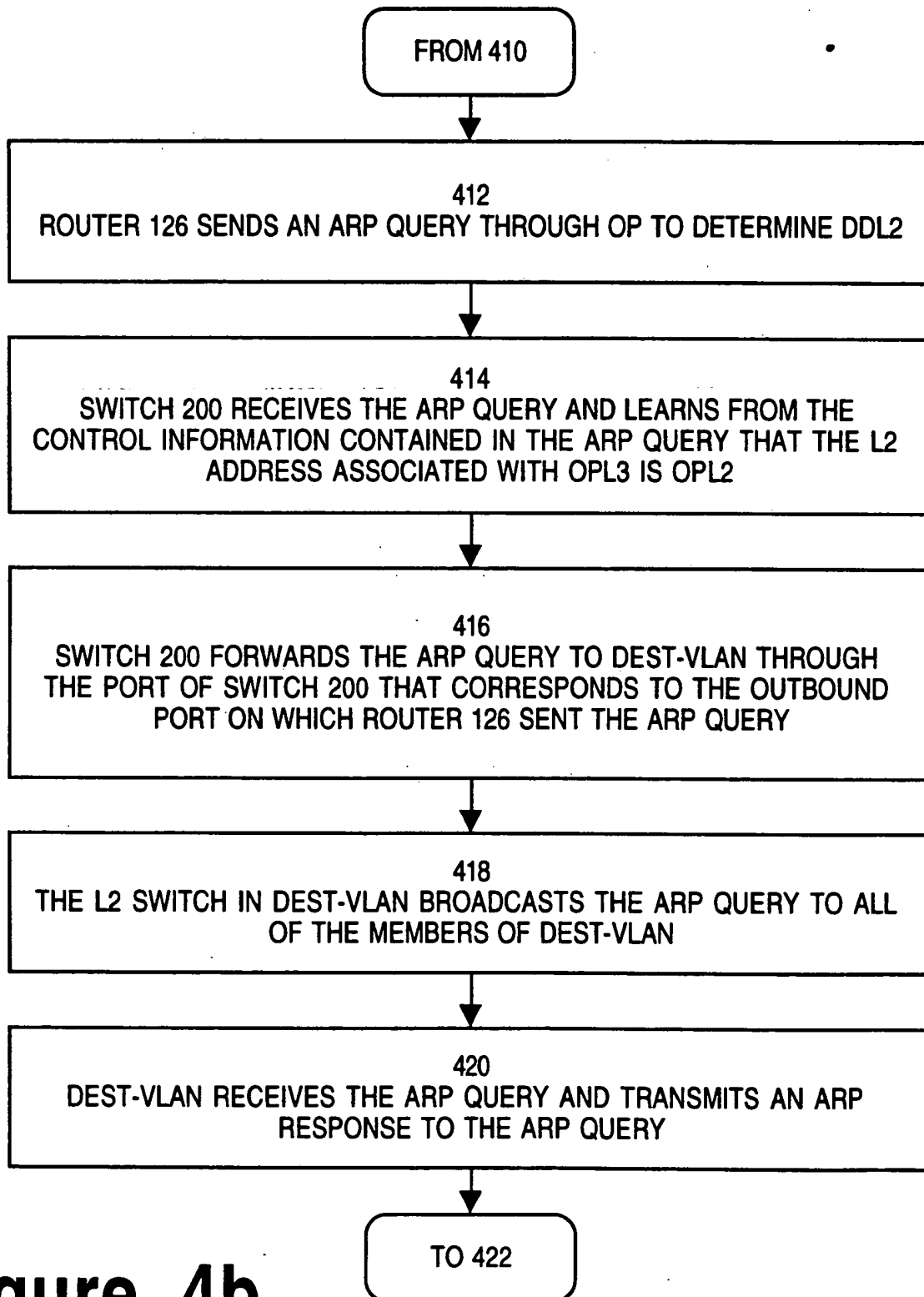


Figure 4b

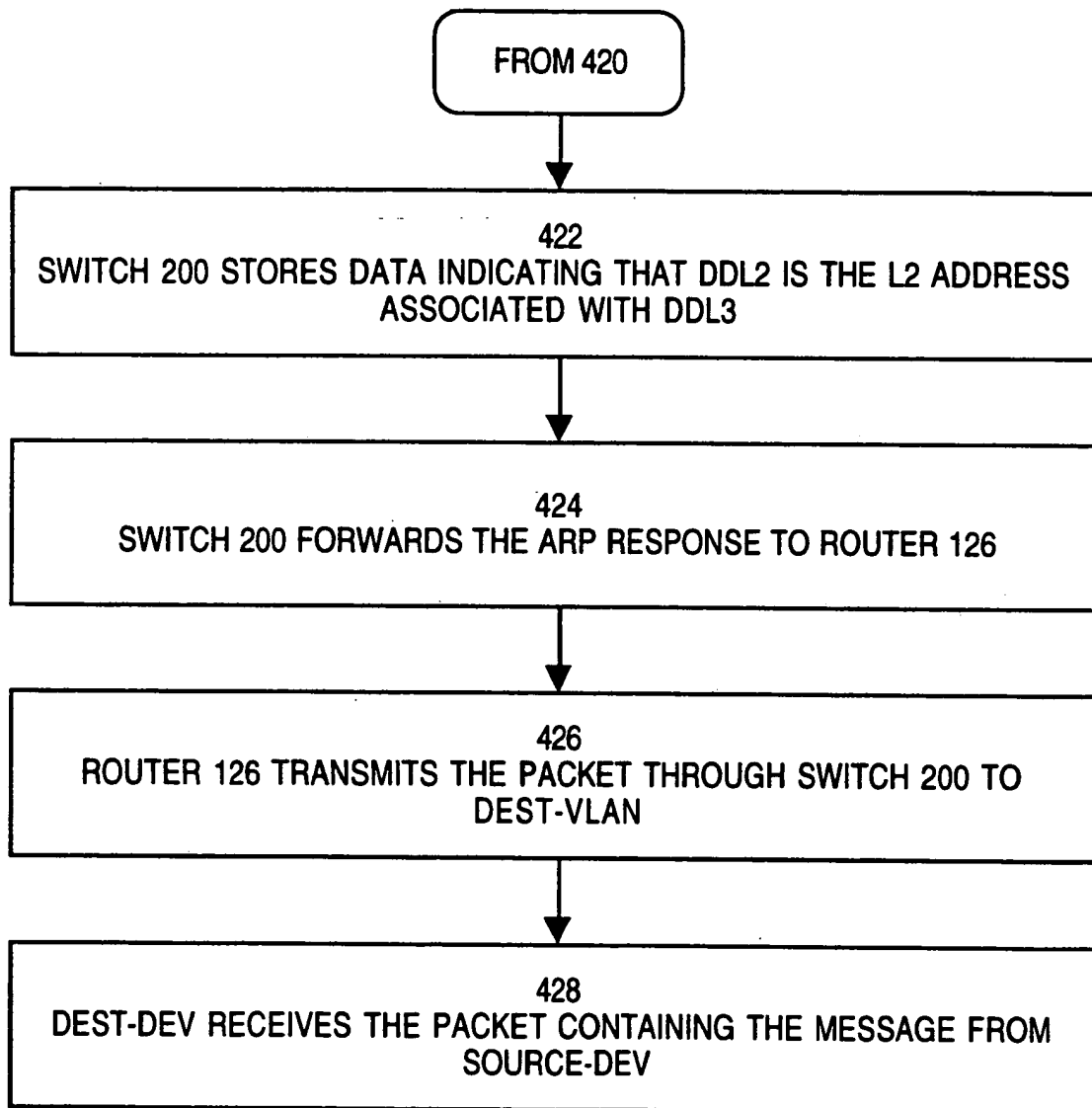


Figure 4c

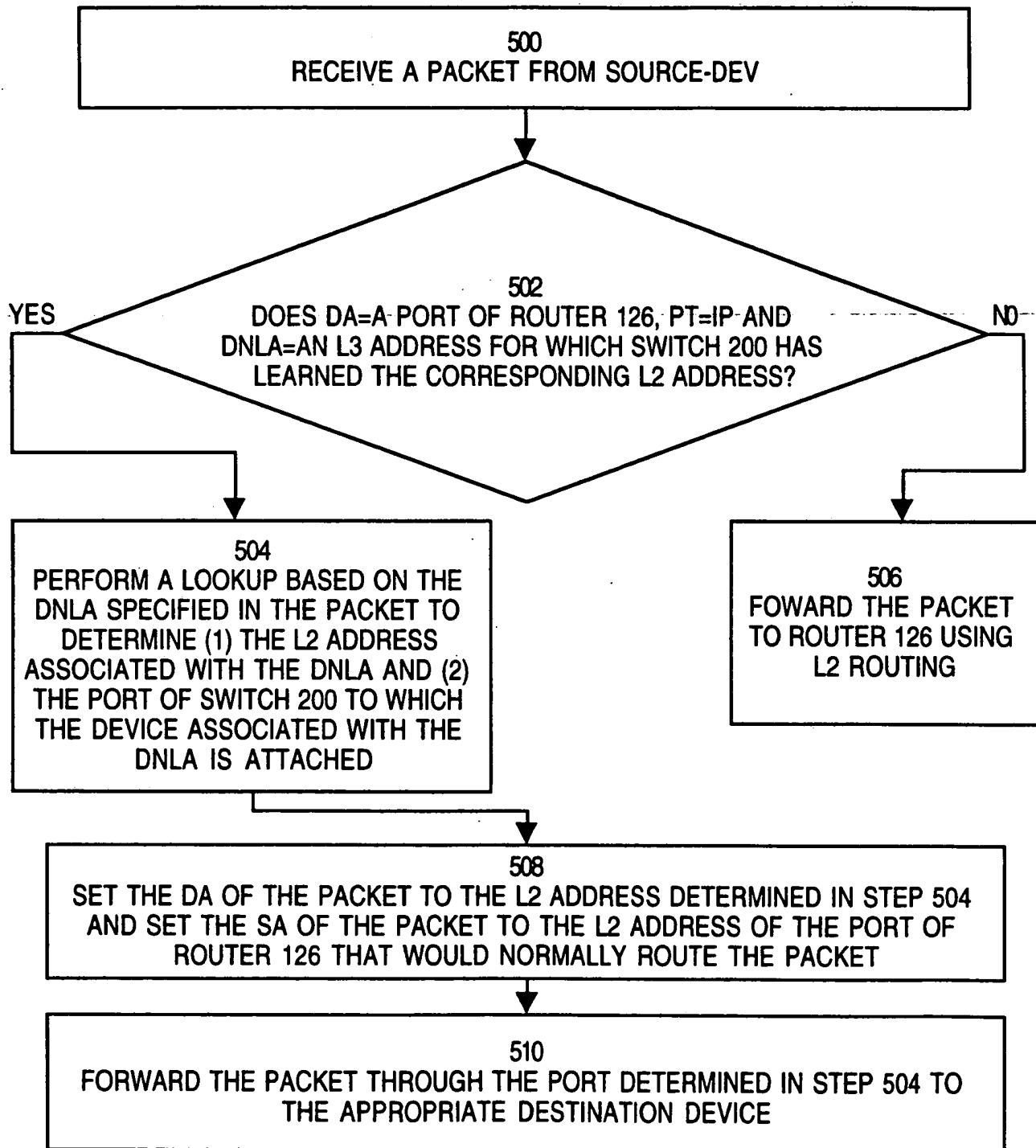


Figure 5

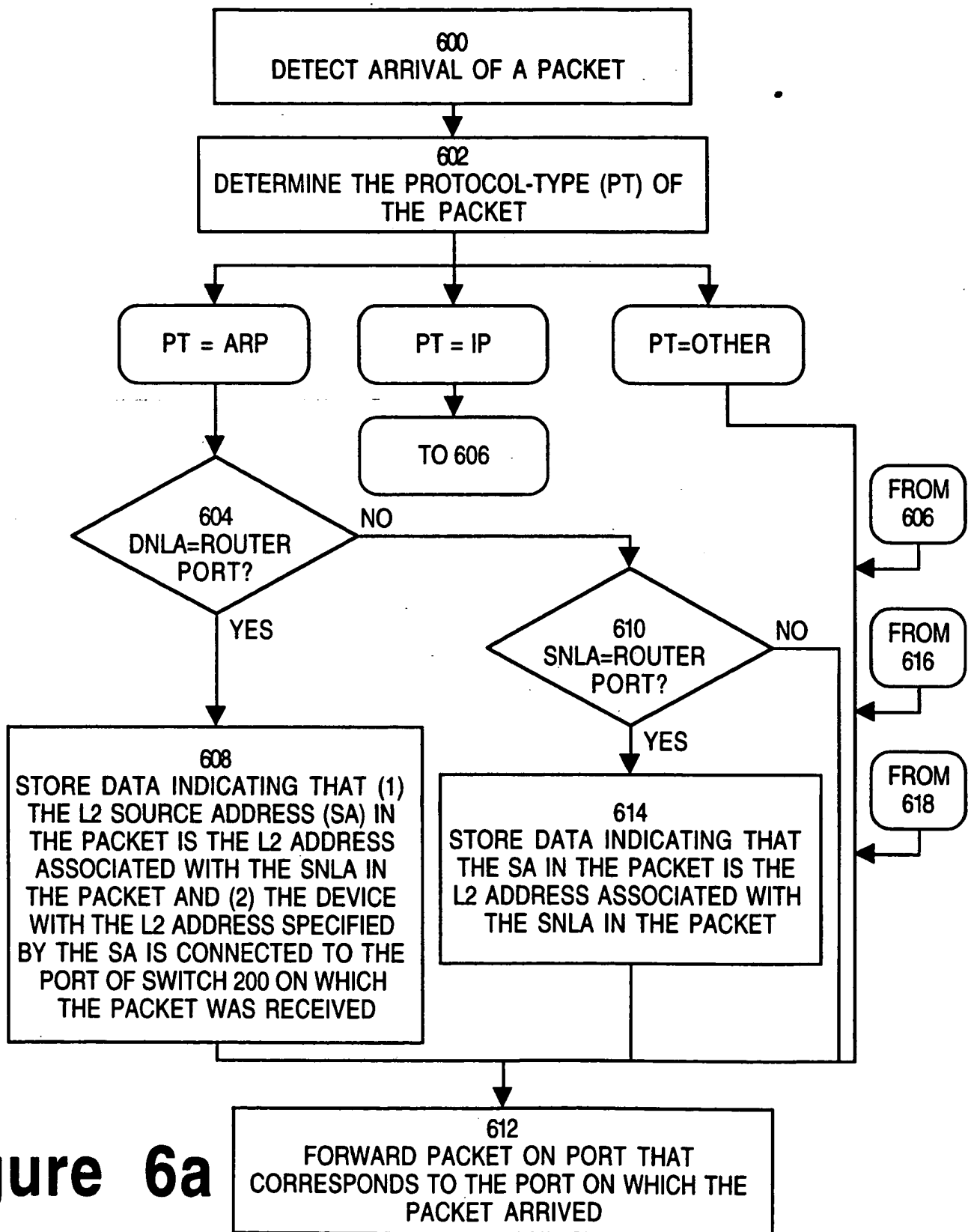


Figure 6a

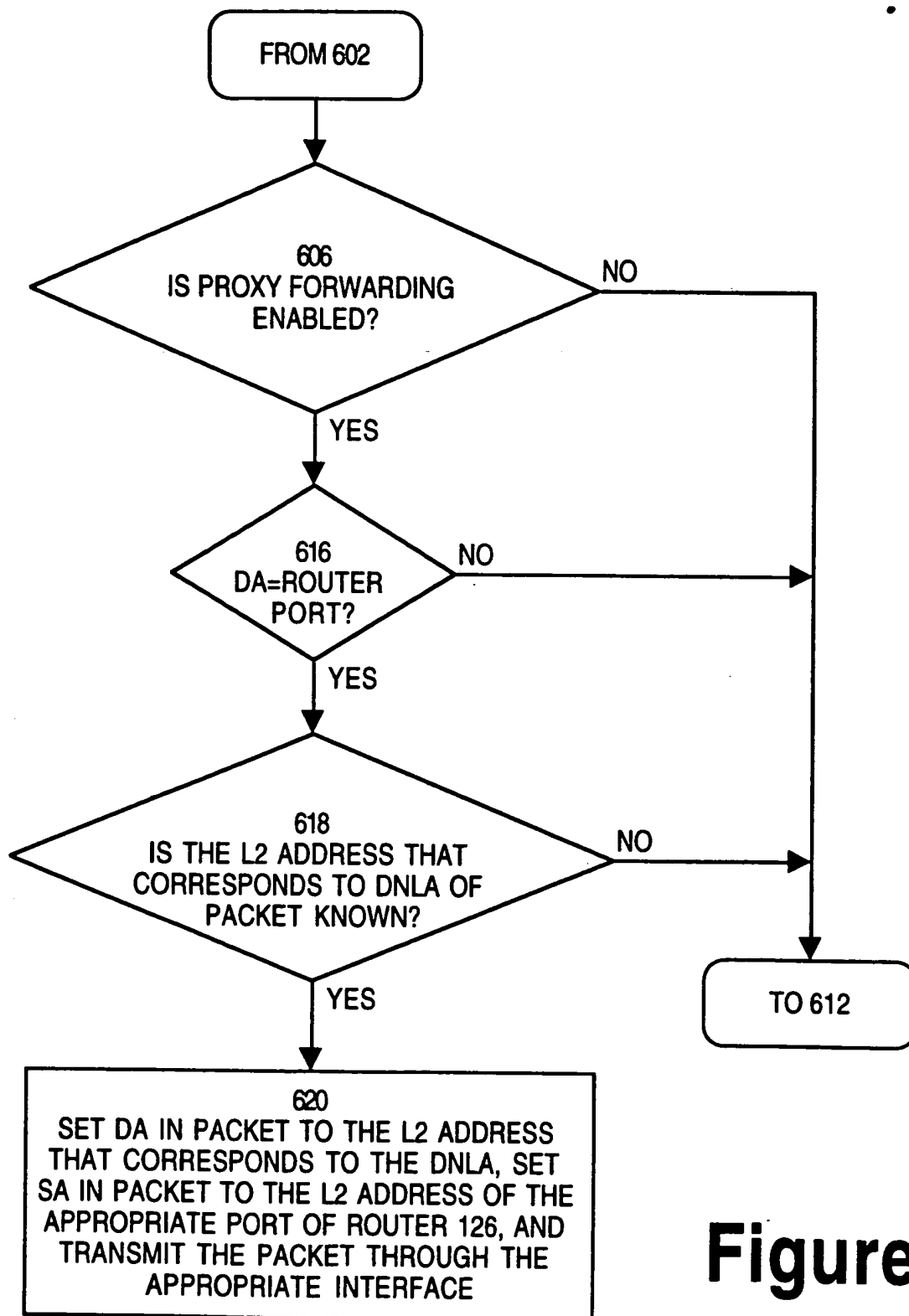


Figure 6b